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Tracking The Fly

mediterranean fruit fly

By Arthur M. Duke

Pursuit of the Mediterranean fruit fly over several counties of Florida continues. Combined forces of the Plant Quarantine and Control Administration, United States Department of Agriculture and of the State Plant Board at this writing are said to total slightly more than forty-six hundred workers. This figure includes laborers, and members of the Florida National Guard on quarantine duty.

This is rapid growth for such an organization to make. This is written approximately six weeks after the date upon which the real work of organization began. Simply the hiring of so large a force has been no small task. Much actual work, however, has been accomplished within this period.

During this time more than seven hundred separate infested properties have been located and charted within the area now under quarantine. Something of the magnitude of the work involved is shown by the records that these properties, as this is written, have been cleaned up and sprayed, together with all territory within a mile around each, involving, it is estimated, a total of something more than sixty thousand acres.

Spraying is going forward rapidly by aid of additional equipment obtained from the United States Department of Agriculture and considerable encouragement is found, it is stated, in the diminishing fly population recorded by the scientific observers.

Locations of the various infestations by counties, as recorded to this time together with the nearest towns to the infestations in each case, are as follows: Brevard County; Allenhurst, Aurantia, Banyan, Cocoa, Cocoa Beach, Courtenay, Frontenac, Indian River City, Indianola, Merritt, Merritt Island, Mims, Oak Hill, Rickledge, Sharps, Chiloh, Titusville, Tropic, Turnbull: Duval County; Jacksonville: Lake County; Altoona, Astatula, Astor, Astor Park, Clermont, Eustis, Fruitland Park, Grand Island, Lake Eldorado, Mt. Dora, Mt. Plymouth, Oakland vicinity, Pittman, County; Weirsdale: Orange County; Sorrento, Tavares, Umatilla: Marion Apopka, Clarcona, Conway, Eastonville, Ft. Christmas, Fuller's Crossing, Golden Rod, Lake Mann, Lake Pickett, Lockhart, Killarney, Maitland, Minorville, Mt. Dora, Oakland, Ocoee, Orlando, Orlo Vista, Piedmont, Pine Castle, Plymouth, Taft, Tangerine, Tildenville, Vineland, Garden, Winter Park, Zellwood: Wewahotee, Windermere, Winter Osceola County; Kissimmee, Kissimmee Park, Narcoossee, Narcoossee (15 Mi. E.), St. Cloud: Polk County; Auburndale (4 Mi. N.), Haines City: Putnam County; Lake Como, Crescent City, Pomona, San Mateo: Seminole County; Altamonte Howell, Lake Mary, Lake Mills, Springs, Chuluota, Forrest City, Lake Longwood, Maitland (Northwest), Oviedo, Paola, Sanford, Silver Lake (N. Shore): Sumter County; Oxford: Volusia County; Allendale, Barberville, Benson Junction, Daytona, DeLand, DeLeon Springs, Edgewater, Emporia, Farmton (4 Mi. N.), Geneva, Glencoe, Glenwood, Holly Hill, Lake Helen, Maytown, New Smyrna, Oak Hill, Orange City, Ormond, Osteen, Pierson, Port Orange, Samsula, Seville, and Spring Garden.

Methods of procedure have been developed which are proving quite successful. A corps of experimenters continues daily to try out everything which common sense and scientific knowledge would indicate to be effective in the fight against the fly, but aside from the use of nothing of startling nature has been the airplane to a moderate extent developed.

The airplane has been called into regular service in fly eradication; and according to statements at the Orlando headquarters is proving to be of very great service. Experimental flights having proven successful, surveys by plane are now a regular feature of the work.

Trained observers with maps first check the location of groves and vegetable fields. Such checks are then tabulated and compared carefully with reports of inspectors and of clean-up crews. This makes it possible to locate quickly any properties which may have been overlooked by the ground forces traveling over woods roads by automobile. In a few hours a trained observer in a plane can cover accurately territory which it would take days to cover by automobile.

Another use of the plane is to locate the presence of wild host plants quantities in the proximity of groves, particularly where they occur in as for instance where hammock growths run close to the border of grove properties. Not only does the

use of the airplane greatly speed up such operations, but the observations from the air prove to be surprisingly accurate when later checked by the ground forces, it is said.

Division of the quarantine area into 8 districts to facilitate fly eradication work was announced recently. Districts extend from Jacksonville to northeast portion of Polk County with a newly appointed district inspector in full charge of all departments of eradication work in each.

Including National Guardsmen and laborers joint fly eradication forces now have grown to more than forty-six hundred men. In addition there are citizens committees and volunteer workers accelerating clean-up work in many localities. Difficulty of directing from executive offices in Orlando so large a force over an area two hundred miles long and seventy miles wide at its widest point is reason for creation of districts to enable closer supervision and better adaptation to local conditions.

Former department heads will continue in charge at Orlando but in each district all work now will be coordinated. Suitable offices are being opened in each district as headquarters. Following are district inspectors and territories: Duval County, K. E. Bragdon, 3590 St. John's Ave., Jacksonville; West Volusia-Putnam, A. V. Smith, DeLand; Seminole, J. W. Monk, Sanford; Orange-Osceola, Geo. Burden, Orlando; Lake, Harry Fogg, Tavares; Polk, Harold Mowry, Haines City; East Volusia, V. I. Clark, New Smyrna; Brevard, Frank Stirling, Cocoa.

About two hundred inspectors are in the field at the time this is written. The need for putting even trained entomologists through the inspectors' school in order to gain first hand knowledge of the Mediterranean fruit fly and its habits has slowed up this phase of operations.

Due to the resemblance of the larvae of certain other insects to the larvae of the Mediterranean fruit fly even the most experienced inspectors are not allowed, officially, to declare an infestation until after the specimens gathered upon the property have been sent to the Orlando headquarters and there passed upon by expert microscopists who compose the determination bureau. These officials decide if the specimens gathered are of Mediterranean fly or are something else. Experienced inspectors almost never send in anything other than genuine Mediterranean fruit fly specimens but many property owners and others have had to be told by the determination bureau that the specimens they sent were of this or that fairly common insect in the Florida fruit belt.

Reports that Valencia oranges are not subject to infestation by the Mediterranean fruit fly are wholly erroneous and only serve to mislead growers and the public according to Dr. Wilmon Newell, plant commissioner. Not only do the official records of the fly fighting forces at Orlando show a considerable number of infestations to have been found in Valencia oranges, but they have been found in kumquats and nineteen other varieties of citrus fruits.

In addition the official records show infestations to have been discovered in all of the following: peaches, guavas, Surinam cherries, eugenia, Barbados cherry, and white sapota. In some instances the infestations found in these non-citrus fruits have been in otherwise uninfested areas and have resulted in such being declared zone 1 territories with all the resultant restrictions and handicaps to crop production.

Ownership of a thrifty family of Mediterranean fruit flies to be observed through glass may be a matter of personal pride and enjoyment; but it is also a distinct personal liability because of the penalty provided by law for such possession. Members of the forces recently have been explaining this fact to several persons thus found in the possession of live fly exhibits.

The exhibits in each case have been confiscated, and generally with full approval of the owners after they understood the penalty for possession of such, and the reason for the regulation. Every instance so far reported is said to have been simply an unintentional violation due to ignorance of the penalty incurred and of the danger run through possible careless handling of such exhibits. Therefore no prosecutions have to date been instituted against the offenders discovered.

One quite elderly gentleman was found to have created an interesting exhibit from which his small grandchildren were deriving much pleasure. A piece of infested grapefruit peel placed in a bottle had increased to a lively exhibit of flies, larvae and pupae all within the bottle. When it was explained to him how easily the children might accidentally spread the fly while carrying it to show to envious playmates at a distance, and the penalty for such possession was explained, he gladly relinguished his pets.

In this instance the flies in captivity were in zone 1, an infested zone. If that had not been the case, inspectors would have required under the law to declare this an infestation with the result that the property of the owner and of his neighbors for a distance of a mile in every direction would have been declared an infested zone, thus becoming subject to all the restrictions put upon zone 1 properties by both state and federal authorities.

So feared was the Mediterranean fly that prior to its invasion of Florida, entomologists in the United States were not allowed to experiment with it in this country. Studies of it therefore had to be made at points in infested countries abroad or in Hawaii.

Possession of flies, larvae or pupae is under the ban in Florida and entails a possible heavy fine. Transportation of Mediterranean fruit flies in any stage of development and for any purpose is prohibited under provision of Act of Congress approved March 3, 1905 (33 Stat. 1269). The reason is the great danger of spreading the fly in the hands either of the public or scientists. Extreme care therefore is being taken at Orlando to safeguard all experiments with flies, pupae or larvae now being conducted by the group of scientific men detailed to study them.

Departmentization of the work and the steady drive of trained executives has shown results in obtaining a high degree of organization among the forces within even so short a time. The work now is following a formula and more or less settling into a groove, though there is no relaxation of the tremendous driving force which Dr. Newell and his staff are exerting. Time is the essence of all transactions. Speed continues to be a first requisite but speed is no longer attended with disorder and confusion. The situation at present is aptly described in Dr. Newell's recently issued appeal "Let's Starve the Fly" in which he says:

"The idea behind the effort of the forces of the State Plant Board and the Plant Quarantine and Control Administration of the United States Department of Agriculture toward eradicating the Mediterranean fly from Florida is coming to be grasped by the great majority of Florida residents.

"That idea is to starve the fly of its natural foods and to drive it to eat of the bait spray which continuously at intervals will be distributed over the infested properties for the flies to feed upon.

"By cleaning up thoroughly all natural food for the fly from the infested and surrounding properties in both the infested and protective zone the fly should be left without any of

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Mediterranean Fruit Fly

Refrigeration of Infested Fruit Not An Adequate Safeguard Against Spread Fruit Flies

By C. S. Marlatt, Chief, Plant Quarantine and Control Administration

Following the recent discovery of the establishment of the Mediterranean fruit fly in central Florida there has been a large demand for some publication giving the life history, habits, and means of control of this pest. The most available publication on this subject is Bulletin 640, by Back and Pemberton of the Bureau of Entomology, entitled "The Mediterranean Fruit Fly," published in 1918 and based on some four years' studies of this pest in Hawaii. To meet the demand for information, this bulletin has been reprinted and widely distributed.

The possibility of destroying the early stages of the Mediterranean fruit fly by refrigeration of infested fruit is briefly discussed in this bulletin (p. 36) and this discussion has encouraged the idea that adequate refrigeration could be accepted as an alternative for destruction of fruit under suspicion of infestation. These experiments were of a laboratory or small-scale nature—not confirmed by commercial tests in bulk or under shipping conditions—and were not deemed to be sufficiently convincing to warrant any movement of fruit from Hawaii to the mainland on the basis of refrigeration. These experiments are, however, of very distinct value in indicating that the immature stages of the Mediterranean fruit fly may be destroyed in considerable percentage at least by holding such fruit for two or three weeks in storage at temperatures approaching freezing.

That refrigeration, even for a period of six weeks, at a temperature of about 34 degrees F. does not furnish a safe basis for shipment of infested fruit would seem to have been very clearly demonstrated by later tests. There is, however, need of further investigation in this field, namely, the determination of whether the holding of fruit at still lower temperatures—28 to 32 degrees F. for example—for the necessary period will destroy the early stages of this insect, conditioned, of course, on the fruit being able to withstand such temperatures, and, even more important, the demonstration that in commercial practice the required degree of temperature can be maintained and equally distributed throughout the mass of stored fruit.

The status of our present information with respect to refrigeration as a means of eliminating the risk of the carriage of this pest with infested fruit is summarized in the following paragraphs which are taken, with little change, from reports which have been made on this subject in answer to various inquiries as to the possibility of modifying the restrictions of Quarantine 56 and the entry of fruit and vegetables from countries known to be invaded by the Mediterranean fruit fly:

> "The possibility of killing fruit fly eggs, larvae, and pupae in fruit by refrigeration was discussed at considerable length in connection with the public hearing held in 1923 preliminary to the promulgation of Quarantine 56 under which restrictions were placed on the entry of fruits and vegetables from all foreign countries known to be generally invaded by the Mediterranean or other fruit flies. On account of the known general occurrence of the Mediterranean fruit fly in the Union of South Africa these restrictions were extended to that country, and as a result the authorities of that country undertook a new and very careful and technical examination of the subject of control by refrigeration. The results of this examination were communicated to this Department in a formal report from the Acting Secretary for Agriculture. A summary of these results was later published by the Department of Agriculture of the Union of South Africa, in the Journal of that Department for October, 1923. These experiments indicated that the fruit fly larvae may live in cold storage at about 34 degrees F. (approximately 1 degree C.) for a period of 6 weeks and still transform to adults when removed from cold storage. This work in South Africa was carried out by persons who are known to this Department to be highly trained and entirely reliable. Furthermore, it was to the interest of South Africa to demonstrate that refrigeration was an effective safeguard, with the intention of making the experiments basis of an appeal for admission of shipments of restricted fruits to the United States. It is, therefore, worthy of note that having determined the contrary to be the fact the South African authorities were prompt and frank in communicating this information to this Department.
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> "In confirmation of the results obtained in South Africa, and as indicating clearly the failure of refrigeration in a practical shipping test, reference may be made to the arrival at the port of New York in 1926 of a large shipment of grapes from South America which had been kept under refrigeration at a temperature of approximately 34 degrees F. during the period of 18 days en route. These grapes on arrival proved to be generally infested with living fruit fly larvae (Anastrepha) and were refused admittance.
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> "That commercial refrigeration of fruits and vegetables for storage or in transit is subject to considerable variation as to uniformity of temperature maintained, as well as to large opportunity for error, has been clearly demonstrated over a considerable period of experimentation and examination of the subject by this Department. No method has been devised which will maintain a uniform temperature in the different tiers, either in a refrigerated car or compartment. The minimum temperature in the lower tiers must be maintained above the freezing point and under this limitation the upper tiers will average fully 4 degrees warmer than the lowest tier, with a result of losses which it has not

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Improvement of Citrus Fruit Grades from Standpoint of Feeding and Cultivation

By Paul Hayman, Lee County, Agricultural Agent

The Experiment Station and the Extension Division of the University of Florida, the Marketing Agencies and Packing House Managers of Florida have, for years, made a special effort to impress upon the growers of this State the great importance of growing a better quality fruit, thus enabling the shippers to improve upon grades and packs, which in the end means more money for the citrus growers.

There never has been a season in the history of the citrus industry that there has been a greater need of unified effort on the part of the Citrus Growers of the State to produce a quality product of uniform grade than this season. Maximum and quality production at minimum cost should be the slogan of every citrus grower, and unless we coordinate our efforts to improve our grades, in a few years it will only be the "Survival of the Fittest."

There are many factors that influence the grade and quality of citrus fruits, but the only ones I will attempt to discuss at this time will be from the standpoint of fertilization and cultivation, briefly touching on cover crops and and irrigation, as these subjects are of too great an importance to be discussed now.

The three essential elements of which the soil is deficient, except in limited quantities, and are required by plants in large quantities, are nitrogen, phosphoric acid and potash.

Let us consider the importance of these elements in plant nutrition.

1.—NITROGEN: Nitrogen, with the exception of water, is the limiting factor effecting plant growth and naturally pays the largest part in the forming of new growth and leaf development. Nitrogen is necessary in the production of protoplasm, of which protein is the principal constituent and is the physical basis of life. There are three forms of nitrogen which should be supplied to plants in well balanced ratios. (1) Organic, (2) Ammoniacal and (3) nitric.

The nitric nitrogen is soluable and is immediately available for plants, Ammoniacal nitrogen is converted into nitric form by bacterial action and is made available for the plant in a short time. Organic nitrogen takes somewhat longer due to its process of being changed to the ammoniacal form than to the nitric by bacterial action and decomposition before it is taken up by plants. Some of the materials containing nitrogen found in our commercial fertilizers are nitrate of soda, sulphate of ammonia, calcium nitrate potassium nitrate, ammonium nitrate and organic forms, such as dried blood, Peruvian Guano, Tankage and Fish Scrap, etc.

2.—PHOSPHORUS. Phosphoric Acid is necessary in cell development. It builds fiber and good root systems. It makes seeds, hastens early maturity and ripening of fruits, gives stability and vigor to plants, aids in hardening and maturity of growth. Available phosphoric acid is derived from superphosphate and animal bone.

3.—POTASH. Potash is used in largest amounts in the growing parts of plants. It fills out and matures growth and plays an important part in the forming of fruit buds, where an exceptionally large percentage is found. It is essential in the production of starches and sugars in fruits. It helps to regulate growth and improve quality. Our principal sources of Potash are from Sulphate of Potsh, which analyzes 48% actual K-20, Muriate of Potash analyzing 0% K-20 and Nitrate of potash analyzing about 12% actual K-20.

We have no experimental data available to the grower at this time which will give us the number of pounds of each of the above materials to use to different aged trees on different types of soil for the improvement of fruit grades. There is great need of further research along these lines and I feel sure that as soon as funds are availabe the experimcnt station will spend some of its energies in this direction, and in a few years give us information that will be of great value to the citrus industry of the State.

Last year, 1928, Florida consumed 468,907 tons of commercial fertilizer, ranking fifth in total fertiizer tonnage consumed in the Southern States. Approximately 180,000 tons was used by the citrus growers of the State, costing them about $7,500,000 for fertilizers alone. The fertilizer cost of fruit production represents about 40% of the total cost, and when the growers of this State experiences years like the present when Florida and California have placed on the markets more fruit than the history of the citrus industry has known, then it is time that the growers of the State realize the great importance of producing better grades of fruit at an economical cost.

If you will go to your packing house and check the records on fruit sales, you will note that on an average orange sizes ranging from 126—150 — 176 — 200 — 216 brought the best price and that sizes higher than 126 and smaller than 216 were discounted or sold at a less price, and that there is a difference of from 25c to $1.25 per box btween the first and third grades of fruit, which is an average and very conservative.

Sales records on Grapefruit will show you that sizes 46 — 54 — 64 and 70 sold higher, and on Tangerines sizes 120 — 144 — 168 and 196 sold for more money.

You will note from these records that in order for us to get greater returns from our groves it is necessary that we produce fruit of a better grade and average size and to do this requires careful study of our groves; the character of soil and its requirements; the tree and its needs. The successful operation of a grove depends upon the growers ability to observe and supply these needs, so the trees will consistently bear good crops and of better grades.

If the tree is to get full benefit of fertilization and cultivation, it is absolutely essential that cover crops be grown. They supply humus to the soil increase the water holding capacity and encourage bacterial life in the soil. They keep the soil in better physical condition and add Nitrogen, which enables the grower to cut down on his fertilizer cost.

In order to produce a better grade fruit, we have to regulate our fertilizing schedule so that the trees

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Improvement of Fruit Grades From the Standpoint of Packing House

By Harold Crews Before Florida State Horticultural Society

Too often the grading of fruit, when honestly done, is regarded by the packing house manager or the grower whose fruit is thus graded as a harm rather than a benefit. Too often grading standards are made only to be side-stepped or broken wherever possible by some houses in the mistaken belief that the few slightly greater returns obtained for the fruit on which the grade is misrepresented is a greater asset to the house and to the grower than the consistent acceptance at market price of a pack honestly and uniformly graded.

In the above statements, to my mind, is the general gist of the grading situation from the viewpoint of the packing house. When all growers and all house managers realize that Lincoln's well phrased statement that you can't fool all of the people all of the time, applies just as well to the fruit trade, our inspection force would have a task of education as to how to apply grading standards rather than the compulsory job of making houses live up to the established standards. The days of the successful application of the principle "let the buyer beware" are past. The trade is extrmely wary of the product from a packing house which practices grade juggling. It sharply discounts that product on the first appearance of false standards.

On the other hand, I find that grading standards are generally accepted by packing houses and growers at large as an asset when properly applied. It is a pleasure to be able to say here that there has been a tremendous improvement in grade and pack during the past two or there years. I do not infer that we are approaching real near to that perfection of high standard and consistent uniformity which I believe we all hope to attain, but rather I contrast the situation during the last few seasons to those of years ago. Florida this season has had more low grade fruit than ever before and yet the grades in genral have been closer to uniformity than at any time in my experience. For this, both operators and growers share the credit.

I believe we all realize the difficulty in the establishment of a definite, uniform standard in Florida. A great variation in fruit qualities exists throughout the state. There is an equally great variation between groves in the same section because of more favorable natural conditions and the finer or more careful cultural methods practiced.

In view of this situation it is natural to ask, "What is a Number One or a Number Two fruit when that standard must be applied statewide?" Any definiation of state-wide grading rules for Number One and Number Two fruit must recognize that there is a distinct variation in quality between and in various sections of the producing belt and must strike at some line of uniformity and some basis of segregation, just and constant, if we are to succeed in marketing to the greatest advantage.

Generally, I consider that Number One fruit is that of a very good texture, shape and color. It must not be measurably affected by disease or mechanical injuries. In other words, Number One fruit comes within a reasonable range of being perfect.

When fruit falls below these standards noticeably and yet retains the above desirable features to a recognizable degree, it is Number Two, or Choice, fruit. This is all on condition, of course, that the eating quality and presence of juice is high.

All fruit which is generally of poor appearance, heavily affected by the marks of disease, pests or mechanical injuries should be thrown into the cull class. Right here I want to emphasize that in my opinion the industry makes a grave mistake in considering the so-called Number Three, or cull, fruit as a merchantable standards under such conditions to grade. Any lowering of grading include fruit of this type will produce a positive reaction in the trade standing of the brands whose grades are thus tampered with.

Many growers, and some shippers, have sold themselves the idea that any fruit that has juice is merchantable. After making due allowance for the outlet to canners, I believe that this idea is wrong, and that this is the cause of a lot of our marketing difficulty. True, very heavily russeted grapefruit can be marketed in a certain section to advantage, but this area and this demand is limited. I believe that generally the statement applies: Fruit below Number Two grade is not merchantable except to canning plants. The fact that we have no Number Three grade defined bears me out in this opinion. And the fact that there is not defined standard for a Number Three fruit makes it all the more difficult to establish a generally merchantable, plain cull or Number Three grade.

With all the variation in fruit of a similar variety which we have in the state, some might doubt the possibility of a real degree of standardization and uniformity. It is our practice to consider that the first basis of grading is the avoidance of contrast in the same pack. Though we may clearly see that certain sections produce a Number One fruit of a certain variety which is considerably ahead in general appearance and quality than the Number One fruit of another section, we also bear in mind that this first grade fruit of the less favored section is valuable and worthy of receiving more than the return due the Number Two fruit of the same section. The trade recognizes this basis of grading and stipulates when it desires brands or packs from certain sections of the state. Some shippers have capitalized on this fact and developed certain markets to the continual acceptance of fruit from certain sections of the state, thereby maintaining in those markets consistency and uniformity.

Thus, a standard at best is only a minimum line or limit which we can draw to meet on one hand the desires of the trade, and on the other to obtain the most for the grower and operator. With this in mind, it should not be difficult to establish general standards or to maintain a reasonable extent of uniformity throughout the fruit belt.

This variation, as I have said, is not confined to sections but appears to a large degree between the fruit of different groves in the same sec-

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Fruit Movement and Distribution

By J. Curtis Robinson, Former General Manager of the Florida Citrus Clearing House Association, Before the Florida State Horticultural Society In Clearwater.

It is said that he who makes two blades of grass grow where one grew before is a public benefactor and I think it fair to assume that this sentiment will have a particularly strong appeal to the members of the Florida State Horticultural Society.

If this be true, I suppose it would not be improper to say that he who makes two dollars grow where only one dollars grew before would also be entitled to commendation, provided this result were produced by honest dealings and fair practices.

The subject of Fruit Movement and Distribution might be discussed from several different angles, but as related to the aims and purposes of the Florida Citrus Growers' Clearing House Association and stated in a nut shell the control of fruit movement is regarded as one of the most important methods of producing a satisfactory net return to the grower without gouging the consumer.

No time need be spent in arguing that unless on the average the grower of citrus fruits can secure a reasonable net return he will not continue to produce them. True, it is more difficult for him to change than a grower of field crops, but the fact remains that unless the growing of citrus fruits is profitable, or can, by proper methods, be made profitable, it will not be continued.

Man has little control over the quantity of fruit which will be produced in any given season. Considering Florida conditions, cultivation, fertilization, spraying and pruning, all affect the matter. But when all is said and done, a citrus grove has no very close resemblance to a manufacturing establishment, and a man cannot say that whereas he produced 10,000 boxes of fruit this year and received an unsatisfactory return he will produce only 5,000 boxes next year.

In considering fruit movements and how they may be handled or regulated, we must also necessarily consider the gradual but steady increase in the total crop due to new plantings and increasing age and productivity of trees already in bearing.

Occasional rare phenomea like the Florida real estate activity of several years ago, sometimes referred to as the Florida boom, will operate to very slightly reduce the total quantity of fruit raised. Storms, insect pests, and tree diseases will reduce the amount of fruit to be marketed in different seasons. But, generally speaking, we must count on an increasing volume of fruit to be moved from Florida year by year, and this fruit must not only be moved, but it must be sold and sold for prices which will net reasonable returns to the grower, otherwise we have dissatisfaction and hard times instead of prosperity.

J. Curtis Robinson

This is the problem of fruit movements and distribution as it confronts the Clearing House Association, and it is a problem of no small magnitude. It is also a problem of great importance when one considers that there is said to be some $300,000,000 invested in grove property in this state, and the crop brings from $30,000,000 upward every year.

It seems to us in the Clearing House Association that the solution of this problem is theoretically simple although attended by great and complicated practical difficulties.

On paper it is easy to plan how to handle the fruit crop and ship and distribute it into all the markets of the country, but it is not so easy to carry such paper plans into execution. It is easy to plan on paper just how much fruit shall be shipped from Florida each week during the season so that the total of any crop can all be shipped and distributed over the entire shipping period. It is an entirely different matter to execute such paper plans according to schedule. There must be taken into consideration maturity of fruit in the groves, weather conditions in Florida, and its effect on the fruit, because if we have dry weather, fruit may dry and drop faster than if we have plenty of rain. Weather conditions in the north also affect demand and distribution.

On paper it is easy to plan to ship all the fruit, but if the volume from Florida, California and other competing states and countries overload and glut the markets then the demand is quickly reduced. The problem to be met, therefore, is to move Florida fruit out only in such volume as to ship and distribute all of the fruit but not more than the markets will absorb at satisfactory prices. We must take into consideration the volume that has been consigned to markets in previous years, the volume that is moving from other states week by week, the weather conditions in the northern markets, and the present and prospective demand, and base our current movement accordingly. We must always bear in mind the volume of fruit in the state to be moved. For this reason and the other fluctuating conditions to which I have referred we cannot base our actions one season just the same as some other season.

It is surprising how great success can attend only partial and incomplete methods. California and Florida together have this year to market a crop more than double the size of last year's crop. In addition, both states have been afflicted by the curse of an extraordinary percentage of small sizes of fruit which cannot be expected to bring a normal price. Still further on account of storms

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Mediterranean Fruit Fly

Statewide Body Formed In Fly War

Formation of the Florida Citizens' organization to carry on a systematic and determined fight for early eradication of the Mediterranean fly was perfected at a meeting in Orlando of citrus growers, shippers and representatives of Florida industries in general.

The delegates perfected their organization, adopted a constitution, elected officers and drafted a proposed form of organization for counties which have not already started an organized campaign against the fly.

Officers Chosen

Col. R. M. Shearer, Pinecastle, was elected president of the new statewide organization. Walter M. Rose, Orlando; Dr. L. A. Bize, Tampa; Senator J. J. Parrish, Titusville; James F. Mead, Jacksonville, and Howard Lee, Ocala, were named vice presidents. Karl Lehmann, Orlando, was named secretary, and L. A. Hakes, Orlando, treasurer.

Election of the officers, whose names were selected by a nominating committee headed by former State Senator John S. Taylor, of Largo, and read before the gathering was by acclamation. The board of directors will consist of the president, the five vice presidents, secretary and treasurer, and one member each of the county committees, throughout the state. Three directors were named at the meeting. They are Harry L. Askew, Polk county; N. H. Constantine, jr., Pinellas; and J. E. Lupfer, Osceola. Directors from the other counties will be named at a later date.

The object of the new organization as set forth in the constitution will be to aid and assist state and federal authorities in every possible way in the campaign for eradication of the fruit fly. Various counties, not only in the citrus belt but throughout the state, are to be organized in order to obtain the greatest possible cooperation in the eradication work, especially in the cleanup campaign.

Information and rulings of the plant board commissioner are to be disseminated through bulletins to each of the county organizations and the members are to be supplied from time to time with lists of non-host fruits and vegetables, which may be planted, brought to maturity and harvested within the various zones in the quarantine area.

Suggestions as to methods of handling and processing crops with the view to obviating a total loss also are to be first furnished to growers whose crops are subject to destruction under quarantine regulations and cooperation is to be sought in representing the citizens of Florida before state and federal authorities in all matters touching their interests in the enforcement of quarantine rules, to obtain "a just, adequate reimbursement for crops destroyed, and four other members of a state delegation held with officials in Washington recently regarding the pest and said the officials were sympathetic with a movement seeking enactment of a bill in congress to appropriate funds to reimburse growers for losses in fruit destroyed under quarantine regulations.

Rose said efforts were being made to compile figures showing the probable loss to the growers, which are to be submitted to congress.

Chase Sounds Warning

J. C. Chase, of Chase & Co., Orlando, shipping and packing concern, said: "We are going to have to eradicate this fly or else there won't be any need to grow fruits and vegetables because there won't be any market for them. California and Texas were offering strong competition in the fruit and vegetable markets and we have got to protect our industry."

FRUIT MOVEMENT AND DISTRIBUTION

Continued from preceding page

Florida has had an unusual and very heavy percentage of low grade fruit in its early crop. Still further, the Clearing House control has not on the average been more than 75 per cent, and the outside 25 per cent has had an influence in interfering with our plans for orderly marketing of several times its proper influence based on volume.

It is difficult, especially in the middle of a season, to make any conservative estimate of results produced. From figures at present available the price level this season has been increased 50 cents per box over the season of 1923-1924, which was the last comparable year. This was done even despite the fact that California and Florida had 20,000,000 boxes more this year than in 1923-1924.

There is no outstanding difference between marketing conditions in 1923-1924 and 1928-1929 except the existence of the Citrus Growers Clearing House Association, and with all due modesty we therefore feel justified in claiming that at least a substantial part of this increase in level is due to the Clearing House Association.

The Florida Citrus Growers Clearing House Association is conceived as an organization of growers to take such measures as will insure, among other things, the orderly distribution and marketing of their fruit. It is not directly a sales or marketing agency, but performs these functions through shipper members, through whom the growers are required to ship, and who agree in general to devote their packing and shipping facilities to handling the fruit of grower members. Its program this year has called attention to two other matters—standardization of grade and pack and advertising. Through a very efficient inspection service, maintained by the Clearing House, we have succeeded in eliminating many bad practices heretofore common, and it is fair to say that Clearing House fruit now conforms to the grade which its brand is supposed to cover. We have published and placed in the hands of the trade a booklet listing all brands used by the Clearing House members with the name of the shipper, the place where the fruit was packed and the grade covered by that brand.

We have expended something over $250,000 in newspaper and magazine advertising and the broadcasting of a radio program, in addition to publishing some 25,000 copies of a booklet containing statements of the value of citrus fruits in the treatment of certain diseases and recipes for their use in health as well as in sickness. These booklets have been mailed upon request, and the call for them will greatly exceed the supply before the end of the present season.

The connection with our newspaper campaign we have taken advantage of local situations, such as the recent flu epidemic in the north, to advocate

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The Citrus Industry

with which is merged The Citrus Leaf

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1123 Florida Avenue
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Telephone 4819

S. L. FRISBIE, Editor and Manager

FRANK KAY ANDERSON ..... Assistant Manager
C. D. KIME ..... Horticultural Editor
A. G. MANN ..... Production Manager

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CHICAGO OFFICE
28 EAST JACKSON BOULEVARD
Telephone Harrison 1233
William Robert Shannon, Manager

NEW YORK OFFICE
118 East 28th Street
Edwin F. Ripley, Manager

GROVE CALENDAR FOR JUNE

Some Timely Suggestions for Grove Work During the Present Month

Stop cultivating bearing groves when summer rains begin.

Finish fertilizing this month.

Plant bush velvet beans or cowpeas in the middles of young groves.

Prunes out dead wood in citrus trees to control withertip.

Watch for rust mites on citrus and at the first appearance dust with sulphur or spray with lime-sulphur (1 to 70).

Spread the parasitic fungi to control whitefly and purple scale on citrus, especially on trees sprayed with bordeaux or bordeaux-oil.

Spray pecan trees with 4-4-50 bordeaux to control pecan scab; repeat every three or four weeks during the summer.

CLEARING HOUSE MAKES WISE CHOICE

At a meeting held in Winter Haven just after the May issue of The Citrus Industry went to press, J. A. Griffin was unanimously chosen as president of the Florida Citrus Growers Clearing House Association, succeeding Judge Allen E. Walker. At the same time, Archie M. Pratt was chosen as general manager of the Association, succeeding J. Curtis Robinson, who asked to be relieved in order that he might again devote all of his time to the affairs of the Growers and Shippers League of Florida, of which he retained the managership during his term of office with the Clearing House Association.

Mr. Griffin is president of the Exchange National Bank of Tampa, a large grove owner and from the outset has been active in the organization and work of the Clearing House Association. Indeed, it was largely through the efforts of Mr. Griffin that the Clearing House was established upon a working basis, and his counsels have been largely instrumental in making the Clearing House a factor for good during the first year of its existence. Mr. Griffin's ability, conservatism and general fitness as an organizer have been recognized from the outset, and it had long been known that both growers and shippers looked forward to the time when he might be placed actively at the head of the Clearing House Association. His unanimous selection, therefore, was no surprise in Clearing House circles, and it is felt that this choice will add much to the prestige and effectiveness of the work of the organization.

Upon the organization of the Clearing House Association Mr. Pratt was urged as the proper man for the general managership of the Association. At that time, however, the choice was not unanimous, and Mr. Robinson was finally prevailed upon to accept the position for the first year of the Clearing House. When the time arrived for the second election, Mr. Pratt was again strongly urged for the position, and was chosen without opposition. Mr. Pratt, formerly of California, has been connected with the marketing of citrus in Florida for the past five years as salesmanager for Chase & Co., leading packers and shippers of Florida fruits and vegetables. He has an intimate knowledge of marketing problems and a wide acquaintance throughout the citrus field and in marketing centers. He has the support of shippers and growers generally and brings to his new position a technical knowledge surpassed by few.

The Citrus Industry believes that the Clearing House Association acted with wisdom in the choice of both a president and a general manager. We believe that the choice of Mr. Griffin and Mr. Pratt will bring to the Association a measure of support and co-operation on the part of growers and shippers which could not have been achieved in any other way. These gentlemen have the ability and the will to make of the Florida Citrus Growers Clearing House Association a real factor for good and a bulwark of strength for the citrus growers of Florida. That they will achieve the goal of their ambitions if given the loyal support to which they are entitled, The Citrus Industry confidently believes. Likewise, we believe that such support will be forthcoming.

As at present constituted and officered, the Florida Citrus Growers Clearing House Association presents a better front and gives greater promise of successful achievement than at any time since its organization.

THE FRUIT FLY SITUATION

Since the last issue of The Citrus Industry, the Mediterranean fruit fly situation has undergone some quite radical changes. Some of these changes are of an encouraging nature; others quite the contrary.

Among the discouraging developments have been the discovery of a number of new infestations, some of them in widely scattered sections, far from the previous infested zones. These infestations, it is believed, have been brought about through ignorance or carelessness in the transportation of fruit from infested into non-infested zones. The infestations in Pinellas and Hillsborough counties, far from any previously infested zone, can be attributed only to carelessness on the part of some one in transporting infested fruit into previously non-infested territory.

On the other hand, the work of eradication in the zones first infested, has been markedly successful. According to reports, the work of the inspectors and their aides in eradicating the fly from the groves and zones originally infested, has been remarkably successful, until now it is said to be well-nigh impossible to find a fly in some of these early infested groves.

Meantime, the work of the inspectors and clean-up workers is going steadily forward and workers are daily being added to the already large army in the field. Government and state aid has been extended to the inspection forces and material in vast quantities has been provided for carrying on the work of extermination being waged against the fly and its larvae. Everything that is humanly possible to be done in fighting the infestation is being done by the forces now in the field. The continuation of this work until the fly has been exterminated is the plan of both state and federal forces engaged in the fight.

Just what effect the fruit fly may have upon next year's crop and shipments is at present problematical. Neither can it yet be told to what extent the infestation may affect the growth and marketing of other host plants besides citrus. We are inclined to the belief that the ultimate effect will be less serious than is now generally feared. Certainly to the extent to which men and means and measures can be successfully used to control the situation, the fight will be carried aggressively and tirelessly forward.

But, while we believe that the fly will eventually be exterminated, the fact remains that many growers in the infested zones will be forced to lose their next season's crop. To meet this contingency, Senator Duncan U. Fletcher of Florida, with the aid of other members of the Florida delegation at Washington, and with the sanction of the California and Texas members, has introduced a bill appropriating ten million dollars to reimburse growers whose crops may be destroyed in the attempt to starve out the fly. This bill has the support of the department of agriculture, and delegations of Florida growers and shippers who have conferred with the authorities at Washington are encouraged to believe that the bill will be approved by congress.

With the department of agriculture behind the fight, with state and national governments contributing men and means to carry on the war, with the best minds in the horticultural field working ceaselessly to combat the pest, we believe that the fight can be won. But it will require not only the work of the men now in the field, but the hearty co-operation of every grove owner and truck grower in the state. The seriousness of the situation must be fully realized, but without giving way to panic. Every citizen must be willing to meet the situation by cheerfully destroying every host plant and backing up the work of the inspectors and field workers to the limit. Half way measures will not do. United, intelligent, unimpassioned effort will win. This is no time for panic on the one hand nor for careless disregard on the other. In the final analysis, the fight will be long or short in proportion to the unity of action on the part of citizens in getting behind the authorities and extending co-operation.

ENTOMOLOGY

Entomology is a highly specialized branch of science. The men who give their lives to the study of insect life are specialists of the highest type.

In these days of specialization the term "scientist" is too inclusive. From Florida's standpoint, in looking toward the eradication of the Mediterranean fruit fly, there are many scientists and all too few entomologists.

Reason for the selection by the United States Department of Agriculture of Dr. Wilmon Newell as chief of the combined fly eradication forces in the field is, however, to be found in Dr. Newell's record in entomological work.

As far back as 1897 Dr. Newell was assistant entomologist at Iowa State College; then he was at the Ohio Experiment Station as an entomologist. Later he was assistant state entomologist of Texas and still later state entomologist for Georgia. Then we find him as professor of entomology at Texas A. & M. College. It was from Texas that Dr. Newell came to Florida in 1915.

Dr. Newell has been president of the American Association of Economic Entomology. He is a member of the American Association for the Advancement of Science; and he is chairman of the National Plant Board, an association of quarantine officers of all states in the union. As a member of the Florida Entomological Society he is known to all students of insect life here; and in national entomological circles he is accepted as an authority on the inheritance of color characteristics in honey bees, and on cross breeding of bees.

Floridians who are accustomed to accept Dr. Newell's ability as an administrative officer and an executive of the State Plant Board, the Experiment Station and the College of Agriculture of the State University are apt to overlook the fact that by training and experience he is first and last an entomologist.

Ex-Senator John Taylor is a fitting successor to L. B. Skinner as president of the Florida State Horticultural Society.

IMPRESSIONS

By The Impressionist

They're pulling the old stuff about C. C. Commander having a "swell time," but we understand that case of mumps was actually quite serious. Forty minutes spent at a telephone in the hall outside his bedroom just as he was beginning to recover proved expensive.

J. W. Carson pioneer citrus developer of the Crooked Lake-Frostproof section has come into the name of "Uncle Joe" to many, but he keeps his pep. And that tall young man we look up to turns out to be the son of our friend the late Muncy Carson who with J. W. made up the old team of Carson Brothers.

It's a funny world. When we tried to congratulate Archie Pratt on his election as general manager of the Clearing House, he said we had better save the congratulations; that he might need them later in the form of sympathy. Then when we tried to condole with J. Curtis Robinson on his retirement from the same position he intimated he was open to congratulations instead.

Just now we have no opportunity to circulate largely among the growers as is our normal custom. Therefore we can make no prediction as to which way the Clearing House cat is going to jump, though we have been asked frequently. This is the season for new enrollment. The month of June also is the time in which members previously enrolled must offer their resignations in writing, else they automatically become members again for the ensuing twelve months. Undoubtedly new members are going to be added and old members will withdraw, but how many of which and how is beyond us.

Queries to us as to why the "Major General" now for the Production Manager of the Exchange show the newspapers are poorly read. It is quite a while now since General Blanding was given command of the 31st Division of National Guards by the War Department. That made his World War title of Brigadier General passe. The division comprises the troops of Florida, Alabama, Mississippi and Louisiana.

Growers with properties in Zones One are tremendously interested to know if they may, or may not, ship any fruit next season; and to the time this is written no one is in a position to tell them. Regulations say no citrus fruit shall be permitted to reach a "susceptible stage of maturity." If you ask us just what that means we must say frankly that we do not know. Nor have we been able to find anyone who does, even though we have had the advantage of excellent contacts. It is our impression that the real definition will be made by the group of scientists who day and night are experimenting and studying every phase of the situation. Also, the progress made in Florida toward eradication, and the progress made in each of various Florida areas, may have quite a bit to do with the outcome.

The federal quarantine, and the corresponding state regulations, are like a railroad schedule—subject to change without notice. That is as it should be, else they could not keep pace with constantly changing conditions. Pressure from inside Florida for relaxation and outside pressure looking to tighten the federal quarantine may have some effect; but the real answer must depend upon the bona-fide progress of the work of eradication.

We have two friends of long standing with considerable scientific reputations, and many years experience with bugs, bugology and other things, and likewise considerable experience with citrus production in Florida. Neither is directly connected with the present eradication effort. Therefore their opinions should be very valuable; but what do you make of this? One is entirely and sincerely sure that the fruit fly and commercial citrus growing are incompatible. He believes either we must exterminate the fly or the fly will exterminate commercial citrus production. He feels that with the fly present we can hope to mature citrus fruits only in oiled paper bags, as is done in Hawaii. The other man is equally sincere in believing the fly can be "controlled," and profitable citrus production continue even with it present, though old and careless methods of fruit handling probably must be changed. Now what do you make of that conflict of what is really expert opinion?

Julian J. Culver, the well known entomologist imported into Florida at large expense by Lorenzo Wilson and expensively maintained by Leonard Bartlum et al, is one of the dollar-a-year men at fly-fighting headquarters. Recently he had occasion to take home a large packing case with the top removed. He lashed it in front of his car and homeward bound rode quite a bit around Orlando on errands. Newspaper men still pester him with questions concerning his new "fly catching" apparatus.

As this is written a statewide meeting has been called to create a new organization of growers and business

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BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc. *Edited by The Growers Service Department*

VOLUME 3.—No. 7 ORLANDO, FLORIDA, JUNE, 1929 PAGE 1

LOUISIANA FARM BUREAU MARKETS THROUGH AFG

It is an interesting story which is told in the Louisiana Farm Bureau News of May 15, published by the Louisiana Farm Bureau Federation with headquarters at Baton Rouge and forty offices in various Louisiana producing sections. The Louisiana Farm Bureau Federation operates the Cotton Association, the River Rice Association and the Louisiana Farm Bureau Selling Exchange.

It is the last named which is represented in the markets by the American Fruit Growers Inc. This Selling Exchange is composed of the Lespedeza Association, the Orish Potato Association and the Truck Growers Association, each operating as a component part of the Louisiana Farm Bureau Federation.

A lengthy news article in the issue of the paper referred to covers the movement of the potato crop; but significant of the very satisfactory service which the American Fruit Growers Inc. is giving the Exchange is the following editorial from the same issue:

"What the Cotton Association is to cotton growers the Louisiana Farm Bureau Selling Exchange is to all the growers of perishable products. The Selling Exchange is operating in a most splendid way. Just now the entire Exchange force is being devoted to the handling of the Irish potato crop. Something over 200 cars have gone out up to this date. Although the crop is short prices have remained fairly stable and are remunerative. No. U. S. No. 1 Irish potatoes have been sold at less than $3.50 per hundred and some of the earliest cars brought $4.15 per hundred. The price today, May 14, is $4.00.

"The American Fruit Growers, Incorporated, employed by the Exchange as it sales agent, is giving splendid service. Not only is the highest market price being obtained but efficient service is being rendered along all lines. The American

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NEARLY TWENTY YEARS OF CONTINUOUS SERVICE

he Marietta Truck Growers Association of Marietta, Ohio, has been for nearly twenty years selling its products through the same organization. Formerly marketing through Crutchfield & Woolfolk, the Marietta Truck Growers Association has continued to market through the the American Fruit Growers Inc. ever since the consolidations which resulted in the formation of the great marketing organization. It continues to use AFG selling service.

The Marietta Truck Growers Association is one of the largest and most important cooperative organizations of its kind in the United States; and its success is attested both by its long years of existence and the large volume of its tonnage. Located in the heart of a large producing area it ships a wide variety of vegetables.

PENITENTIARY AS A REWARD AND NOT AS A PUNISHMENT

So very successful has been the selling this season for the Louisiana Farm Bureau Selling Exchange by the American Fruit Growers Inc. that it has engaged the attention of all those in Louisiana interested in fruit and vegetable marketing, among them state officials. Therefore as a reward, and not as a punishment, an AFG man "went to the penitentiary," as witness the following, which is taken verbatim from copy of a telegram:

"Entirely sold out today 12 cars $4.00 asking tomorrow $4.25 FOB demand exceeds supply—closed deal today with Governor Long handling 30-40 cars potatoes State Penitentiary—transferring Dick there tomorrow His address care Louisiana State Penitentiary Angola, La."

C. N. WILLIAMS HANDLING GEORGIA PEACH SALES

C. N. Williams, salesmanager of the Florida Division of the American Fruit Growers Inc., in now in Fort Valley, Georgia, in active charge of Georgia peach shipping for this organization.

This is the ninth consecutive season that Mr. Williams is rendering this service to Georgia peach growers for the American Fruit Growers Inc.; and the satisfactory nature of the service is well established by the number of prominent marks from the foremost Georgia growers which he will handle this season.

AN UNUSUAL SEASON COMES TO AN END

With shipping for the season now closed in accordance with the federal regulations, there remains to be sold now only such Florida citrus fruit as is in transit, or which has been placed in cold storage for later handling.

After the markets have cleaned up, a satisfactory outlook for such of good quality, and condition as is in storage is hoped for. The total amount of such is not large; and if it comes upon the markets gradually it should be well received.

The close of the season marked the finish of one of the most unusual periods in the history of the Florida industry. Attended by one difficulty after another it was a selling season long to be remembered.

The unusual difficulties of decay, thorned and storm-scarred fruit, very small sizes, and the biggest total citrus yield in the history of citrus production in the United States were climaxed by a quarantine and embargoes with attendant regulation of shipping which caused entirely too much Florida fruit to be thrown upon certain areas to allow of possible satisfactory returns to the growers.

In the face of all this, however, it is well to remember the per capita consumption in the continental United States this season of 96 oranges as against a previous high record of 57. It is self-evident that the public each year is not only consuming a total of vastly more citrus fruits;

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BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
502 Yowell-Drew Building
ORLANDO, FLORIDA

LOUISIANA FARM BUREAU MARKETS THROUGH AFG

Continued from page 1

Fruit Growers, at its own expense, is maintaining field representatives who go out to the various shipping points and assist growers in grading, packing and loading their products. These representatives of the American Fruit Growers pass upon the grade and the products and the highest grades are not only placed and sold under the brand of the Louisiana Farm Bureau Selling Exchange but also have the "Blue Goose" brand attached. This "Blue Goose" brand is nationally advertised and nationally known. Consumers everywhere know that the "Blue Goose" brand is not attached to any product unless it is of the highest quality. Therefore, Louisiana Growers who produce high class products not only receive the benefit of the well established reputation of the brands of the Selling Exchange but also have the addition of the "Blue Goose" brand. These brands in themselves assure growers the highest possible market price that is paid anywhere by any body.

"Not only is the Louisiana Farm Bureau Selling Exchange handling Irish potatoes but is now also selling beans and has handled cabbages and strawberries. Up to this date we have heard no criticism whatever as to prices received for any of the products sold through the Exchange. Later on in the season the Exchange will be handling sweet potatoes and other products as they are ready for market. The office of the Selling Exchange will be open and ready for business during every month of the year and a representative of the American Fruit Growers will be on the ground to handle the business. Nearly all of the products are sold at an F. O. B. shipping point price. In former years the Exchange experienced a great deal of difficulty to the growers. Sometimes it took in getting returns of shipments back three or four weeks to get this done. The American Fruit Growers are handling the business so splendidly that in some cases checks were in the hands of the growers six days after the car left the point of origin."

AN UNUSUAL SEASON COMES TO AN END

Continued from page 1

but that advertising and modern merchandising methods have increased the individual's consumption of citrus fruits very remarkably within recent years.

Just what damage, if any, may have been done to the market for Florida oranges and grapefruit through recent unfavorable publicity in the northern press, is problematical. It does not seem to have been very great, if we take into account the large and continued consumption of them in the territories receiving such heavy shipments. Nor is the effect likely to be long felt. The public has a notably short memory, and provided only sound and merchantable oranges and grapefruit from Florida reach the consuming public next season the matter is likely to be very quickly forgotten.

It seems better that it be allowed to be forgotten than that memory be stirred through any mistaken effort to "advertise an erroneous belief out of the public mind."

The season just closed was not a good one. Even though executives of the American Fruit Growers Inc. are entirely confident that prices realized by this selling organization for its growers were considerably superior to those obtained for similar quality fruit through any other channel, there was not sufficient satisfaction with the season's operations to warrant anyone in bragging upon relative performances.

However, the previous season was a very good one in point of prices; and if we in Florida can bring ourselves to average the returns of grove properties over a few years, it is to be observed that fruit growing here is perhaps more profitable than in any other part of the United States; and bad years in citrus come less frequently than they come to the growers of many other fruits.

Given normal weather conditions the light crop now upon the trees in Florida argues well not only for satisfactory sizes but for a receptivity upon the part of the northern trade which should assure satisfactory prices.

It is as yet too early to forecast the regulations under which the crop may be shipped. It may be sixty days or more before a real inkling of the judgment of the authorities at Washington can be gained. In the meantime, we must aid to clean-up thoroughly in the attempt to earn their approval.

NEW INSURANCE PLAN FOR AFG EMPLOYEES

A new plan of group insurance for employees of the American Fruit Growers Inc. with the Aetna Life Insurance Company of Hartford was recently opened to every employee of the organization wherever located.

This plan provides life insurance with one of the strongest companies at far below the usual cost to individuals and withut necessity for physical examination to everyone who has been employed for six months or longer.

The new plan allows double the amount of insurance to each individual which was allowed under the old plan in effect with the same insurance company. It will become effective as soon as seventy-five per cent of the eligible employees of any division have signed application cards.

In the Florida Division the matter of insurance is in charge of G. D. Wing, auditor at Orlando; and all inquiries and applications should be sent to him. Application blanks have been forwarded to all employees. If any have failed to receive them, they should take the matter up promptly with Mr. Wing. Following are some questions and answers relating to the new insurance plan:

1. Q. How much insurance can we get?

   A. $2,000 and $5,000, depending on position.

2. Q. Do we get a policy?

   A. Yes. Certificates are issued by the Ætna to each individual.

3. Q. Is a medical examination required?

   A. No.

4. Q. Who can get the insurance?

   A. Each male or female employee

who has been in employ of company six months.

5. Q. Do we have to take it?
A. No.

6. Q. How much does it cost?
A. Sixty cents per $1,000 per month.

7. Q. How do we pay for it?
A. Deductions will be made once a month from pay checks.

8. Q. Why is the cost so low to employees?
A. No doctor's fees for examination; no cost of collecting individual premiums; all transactions are on a Wholesale basis; and most important the employer pays the large part of the cost.

9. Q. Does this insurance take the place of or interfere with Conpensation or any other kind of insurance now carried by the individuals?
A. No.

10. Q. When are claims paid?
A. Immediately upon receipt of proof of death or disability.

11. Q. What happens to this insurance if we leave the employ of the employer?
A. Within 31 days the insurance can be changed, without medical examination, into one of the regular individual policies of the Ætna at regular rates.

GERMAN ORANGE IMPORTS 8 MILLION BOXES IN '28

A Department of Commerce bulletin discloses that out of imports of the equivalent of 8,180,000 boxes of oranges (of 70 pounds) in 1928 into Germany, 7,000,000 boxes were from Spain, 919,000 from Italy, 143,000 boxes from Palestine, 42,000 from South Africa, 22,000 from France, 19,000 from Brazil, and 12,000 from the United States. Brazil exported to Germany 20,000 boxes of oranges in 1927 and South Africa 21,000 boxes.

Attention is invited to the fact that imports of oranges into Germany from Spain totaled 7,000,000 boxes in 1928 as against 4,365,000 boxes in 1927 and 4,380,000 boxes in 1926. It will be noted that there was a tremendous increase in the 1928 imports.

CALIFORNIA INCREASES BEARING CITRUS ACREAGE

There has been an increase in bearing acreage of citrus trees in California during the past year of 5405 acres, according to a report of E. E. Kaufman, agricultural statistician. This increase has been mainly in valencia oranges. The increase by varieties has been grapefruit, 1165 acres; lemons, 172 acres, and oranges, 4068 acres. The total acreage in citrus bearing and non-bearing is 276,292. The total bearing acres of all citrus varieties in 1929 is reported at 243,665 compared with 238,260 acres in 1928. Non-bearing acreage in 1929 is reported at 32,627 acres of which 6183 acres are grapefruit 2954 acres lemons, 3414 acres navel oranges, 20,892 acres valencia oranges and 184 miscellaneous oranges.

Acreage planted in 1928 is reported as being grapefruit, 1663 acres; lemons, 716; navel oranges, 832; valencia oranges, 3925 and miscellaneous oranges, 23 acres.

The estimated acreage of bearing fruit trees in California in 1929 is 1,074,530 acres compared with 1,041,401 acres a year ago, an increase of 33,129 acres or 3.2%.

Valencia oranges, pears, apricots, walnuts and Kadota figs make up the bulk of the new plantings, Mr. Kaufman reported. The bearing acreage of grapes is declining, the estimated bearing acreage in 1929 being 634,517 acres compared with 653,483 acres in 1928.

New Officers Named For Clearing House

At a meeting in Winter Haven on May 17, J. A. Griffin, president of the Exchange National Bank of Tampa and an important citrus grower, was unanimously elected president of the Florida Citrus Growers Clearing House Association to succeed Judge Allen E. Walker. Mr. Griffin is recognizd as one of the leading bankers and foremost

J. A. GRIFFIN,
President Florida Citrus Growers Clearing House Association

citizens of the state, and one of the ablest workers in the Clearing House organization.

A. M. Tilden, a prominent citrus grower of Winter Haven succeeds Judge C. O. Andrews of Orlando as vice-president. Mr. Tilden is president of the Florence Citrus Growers Association, which operates one of the very largest packing houses in the state.

Archie M. Pratt, for five years past salesmanager for Chase & Co. pioneer citrus packers and shippers, was elected general manager to succeed J. Curtis Robinson who asked to be relieved that he might devote his entire time and energies to the to the work of the Growers and Shippers League of Florida.

Mr. Griffin and Mr. Tilden take office on July first, but Mr. Pratt assumed his new duties on June first, as Mr. Robinson desired at once to get back into his work for the Growers and Shippers League.

Immediately following his election, Mr. Pratt issued the following statement:

"In accepting the position of general manager of the clearing house I realize fully the difficult problems which confront the industry, the past year being one of the most difficult years in the industry's history. Both Florida and California produced abnormally large crops.

"To add to our marketing difficul-

A. M. PRATT
General Manager Florida Citrus Growers Clearing House Association

ties, we had an extraordinary high percentage of offsized and poor quality fruit. If it had not been for the clearing house, most every one I believe will agree that conditions would have been far worse than they are.

"Now we are in the throes of the fruit fly invasion. If there ever was a time when a united front and coordinated effort of growers and shippers were needed to cope with existing circumstances, that time is now.

"If we are to survive, we must stand together. I ask the support of all growers and shippers in the work that lies ahead, and I pledge the most earnest effort in my power to render capable, loyal and acceptable service."

CHASE & COMPANY APPOINTS NEW SALES MANAGER

Mr. J. C. Chase, Chairman of the Board of Chase & Company, takes pleasure in announcing the appointment of Mr. E. E. Patterson as Sales Manager of Chase & Company, to succeed Mr. A. M. Pratt, who has recently taken up his new duties as General Manager of the Florida Citrus Growers Clearing House Association.

Mr. Chase states that Chase & Company feel extremely fortunate in securing the services of Mr. Patterson as Mr. Pratt's successor. Mr. Patterson has been connected with Chase & Company for the past three years, acting as Assistant Sales Manager of the Company, and has had wide experience in the fruit and vegetable business before coming to Florida. Mr. Patterson has spent considerable time with C. H. Robinson Company, and the Nash Interests, who operate a chain of brokerage offices in the west and middle west, and served as manager of the Kansas City office before coming to Florida.

There are now 10,405 girls and 6,508 women enrolled in home demonstration work in Florida.

IMPRESSIONS

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men to aid in speeding the work of eradication, to the end that the quarantine may be lifted as soon as possible, and, it is whispered, to work also upon problems of compensation. With all the organizations we possess that may sound foolish; yet survey shows it to be necessary. Vegetable interests are as strongly affected as is citrus; and that just about bars the Clearing House from being an effective agent. The Growers and Shippers League, with J. Curtis Robinson again in the saddle, ought to be useful, but for the fact that in really effective work at Washington Florida must have the active cooperation of all its transportation interests. No one would want them to become members of the Growers and Shippers League. Therefore the need is for an entirely new and comprehensive organization to represent growers, shippers, business, banking and transportation, for all are vitally affected; and with all united there is greatest chance for success. It is our impression that this is a time when all hatchets must be buried and a united Florida must face the outside world.

The high degree of cooperation generally being given to the joint fly-eradication forces by residents in the affected sections seems to argue well for the success of the effort. There are a few, of course, who apparently would have federal aid withdrawn and Florida left to fight the fly solely with its own resources and in the face of an airtight quarantine against her fruits and vegetables. Public sentiment, however, is rapidly reducing their numbers, and eliminating the confusion of their arguments. Our impression is that while members of this school may think they are thinking they are incapable of doing so. Who was it said, "to think requires not only a willingness to think but some equipment as well?"

BURNING THE WOODS IS DETRIMENTAL TO FORESTS AND GRASS

Forest fires destroy in a few minutes that which months, years and decades grew, and that which to the farmer is worth many carloads of the very best fertilizers.

Still there are many farmers and friends of farmers who see no particular harm in applying a match to heavy growths of woods grass and under-growth. Little do these persons realize that this heavy growth of grass and under-growth (if not destroyed) will in the long run provide cattle, sheep and other grazing animals with more nutriment than will the constantly burnt-over woods. And little do they think of the terrible destruction of young trees, the source of future lumber and naval stores, when they apply the match.

Scientists and practical farmers tell us that the one greatest need of Florida soils is humus. Then it seems nothing less than waste to destroy this humus so often and so needlessly. Instead of destroying it, we should make every effort to protect and conserve it.

In consideration of the timber phase of this question of "burning the woods," Professor W. L. Floyd, of the Florida College of Agriculture, says, "The future of Florida's forests, especially her cut-over lands, is uncertain. They may be made to produce continuous crops of timber. As the supply decreases and the demand increases, prices will soar, and therein is seen our duty to posterity to protect the future of our lumber industry. There is no better way of doing this than by refraining from 'burning the woods'."

Two hundred pounds of lawn grass seed has been ordered by home demonstration club women of Nassau County for beautification of home grounds.

IMPROVEMENT OF CITRUS FRUIT GRADES FROM STANDPOINT OF FEEDING AND CULTIVATION

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will consistently have good crops; to do this it is also necessary to grow our fruiting wood the previous season. This is accomplished mostly during late spring and early summer months.

Reducing the ratio of nitrogen to potash has a tendency to increase the ratio of fruit buds to growth buds, or any factor which checks the water or nitrogen supply without interfering to any extent with the leaf growth may cause fruit bud differentiation.

Trees showing an upright deep green growth with large leaves should be given less nitrogen, and the potash ratio increased, while trees showing an even bunchy spreading growth can be fertilized with a standard formula with a 1-2-1 or a 1-2-2 ratio, the number of pounds given depending upon age of tree, bearing capacity, type of growth and character of soil. Citrus trees should be kept in good condition at all times, in order to produce maximum crops.

We can fertilize our trees up to a certain point, at which point the trees are at their highest peak of production and producing good grades of fruit. Fertilizing beyond this point may prove injurious to the tree and non-profitable to the grower. Therefore, it seems necessary that we feed our trees sufficiently in order to secure maximum production, which means, a better grade at less cost.

Citrus trees should have plenty of available plant food throughout the year. This will necessitate three or four applications of a high grade fertilizer. The common practice of most successful growers is to fertilize in February with a formula analyzing 4 to 5 per cent ammonia, 8 to 10 per cent phosphoric acid and 5 to 8 per cent Potash with 60 to 70 per cent of the ammonia derived from inorganic and 30 to 40 from organic sources. If the trees are in very good condition and seem slow in blooming, they may be given top dressing of inorganic nitrogen. We should strive to get a uniform bloom, and the spring growth should be even and uniform as possible.

The summer applications as a common practice is made the latter part of May or first of June. This is one of the most essential applications in the fertiizing schedule, due to the fact there is a long span before they are again fertilized, and it is during this period that the trees are carrying a heavy burden, growing a crop of fruit and building wood for the coming season's crop. Under average conditions this formula should analyze 3 to 4 per cent ammonia, 8 to 12 per cent phosphoric acid and 8 to 12 per cent Potash. The nitrogen should be derived mostly from organic sources, due to the fact we have plenty of rains during the summer months and organics become available more slowly.

It is essential that a good percentage of potash be used with the summer application, the nitrogen ratio can be more easily regulated.

The Fall application is generally applied in November and of the three I believe this one is most important. At this period the tree is carrying a crop of fruit and we should use wise judgment in preserving the quality of the fruit. The tree should store sufficient nitrates during the period of dormancy, so it may be in condition to bloom the coming spring. The formula used should analyze about the same as that of the summer appication, but about 60% of the nitrogen should be derived from inorganic and 40% from organic sources.

To trees having heavy crops some growers have found it economical to

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FRUIT MOVEMENT AND DISTRIBUTION

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the advantage of using citrus fruits for special purposes.

Our largest problem has been to properly regulate the flow of fruit to market to insure an ample supply without a glut. Necessarily, we are obliged to consider the movement of oranges from California and of grapefruit from Texas and Arizona. Although the latter movement is still small, it will have to be given serious consideration within the next few years. The storm in Porto Rico this year eliminated one competitor which ordinarily demands careful consideration. In spite of the handicap of the enormous crop in California and in Florida it is a remarkable fact that up to April 1st, 1929 there had been shipped a combined total from California, Arizona, Texas, Alabama and Florida of 74,935 cars of citrus fruit which is 20,499 cars more than the entire crop shipped by these states up to the same date last season, and 18,548 cars more than were shipped by Florida for the entire season in 1923-1924, Florida's largest season up to the present. This fact considered in the light of figures cited and showing a net return of 25 cents to 50 cents per box greater than in 1923-1924 constitutes a remarkable showing of accomplishment by the Clearing House Association.

Our operating committee, composed of representatives of 12 of the most prominent shippers in the Clearing House has met at frequent intervals throughout the season, and since January 1st has met regularly on Friday night of each week. Some of these men travel 50 to 100 miles to attend this meeting at 7:30, often remaining until 11:30 or 12 and then returning to be in their offices the next morning. At these weekly meetings they make a careful canvass of the market situation, consider the anticipated shipments from California and estimate what quantity of fruit can be shipped to market during the ensuing week with reasonable prospect of obtaining the best net return to the grower. Since January 1st based on these weekly estimates by the operating committee and taking into consideration the particular situation of each shipper with reference to total volume of fruit to be shipped by him, varieties whether early or late, local conditions, including droppage or deterioration of fruit, the Clearing House has been issuing strict orders notifying each shipper that he would be permitted to ship a definite number of cars of fruit and no more. Shipments have been made in compliance with these orders. Considering the fact that this is the first time when so many shippers were brought together and persuaded to cooperate for the good of the industry as a whole, the success of this allotting of shipments constitutes another remarkable record.

In view of the importance of the citrus industry to the state of Florida and the absolute necessity of so stabilizing condiitons that citrus growers can confidently count upon receiving reasonable net returns, it is at once the privilege and the duty of every person here present today, whether directly connected with the citrus industry or not, to use every influence and argument at his command to urge growers of citrus fruit in Florida to ally themselves with the Florida Citrus Growers Clearing House Association and to support its efforts loyally, steadfastly and to the limit of their ability.

FRENCH ARMY OFFICER COMES TO FLORIDA TO LEARN ABOUT CITRUS

When a young lieutenant of the French army wanted to get some knowledge of citrus growing and some experience in the citrus game, he got in touch with Florida. And now he is in Florida to spend a year or more on a large citrus farm before he settles in northern Africa.

Last fall Dr. Meade Ferguson, formerly editor of the Southern Planter at Richmond, Va., wrote Mr. A. P. Spencer, vice-directoor of the Florida Agricultural Extension Division here, and told him that the French lieutenant, Andre H. Petitpierre, desired to obtain citrus experience in Florida. Mr. Spencer got in touch with W. E. Sexton, president of the Indian River Products Company at Vero Beach, and arrangements were made for M. Petitpierre to spend a year or more on this company's farm at Vero Beach.

M. Petitpierre has just arrived at Vero Beach and writes Mr. Spencer that he finds there just what he wants, "a fine place to learn and get experience in fruit culture in a hot country and more especially in citrus

culture with persons of good experience who are very kind to me."

MEDITERRANEAN FRUIT FLY

The discovery in Florida of the Mediterranean fruit fly, undoubtedly the most dangerous fruit insect in the tropical and subtropical climates, has resulted in immediate action being taken to stamp out and restrict any further spread of the fly. In this connection, the "Friend" Manufacturing Company of Gasport, N. Y. have been awarded a contract for three carloads of tractor-trailer sprayers, which were rushed to Orlando, Florida, by express.

Farmers of Washington County are planting corn following winter cover crops of vetch and winter peas. They are going to see just how much difference they get between these plots and check plots where no cover crop was grown.

A farm tour was held in Jackson County recently for the purpose of visiting demonstration plots of vetch and Austrain peas. Fields representing 250 acres were visited by 25 farmers.

Here-Sick

Hostess: Are you homesick, dear?

Little Girl (spending her first night away from home): No, here-sick.—The Sailor.

IMPROVEMENT OF CITRUS FRUIT GRADES FROM STANDPOINT OF FEEDING AND CULTIVATION

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give them some form of nitrogen and potash between applications as a top dressing to aid in improving the size and texture of fruit and keep the tree in a healthy, thrifty condition. Organic or inorganic forms of nitrogen may be used.

There have been many tests made with various fertilizer materials with view of trying to improve the quality and grades of fruit, but we have no data to present. However, it has been observed that where extra amounts of Potash were used during the year, that the quality of fruit was improved and more bloom set, but it did not increase or delay maturity to any extent. We have information to the effect that where an application of urea and calcium nitrate was used on separate blocks, it improved the quality of fruit and passed the test earlier, which signifies an increase in the sugar content.

CULTIVATION: Most growers who have groves on the Norfolk series of soils, plow or disc their groves in the Fall of the year, and cultivate with acme every two or three weeks, up until latter part of May, when they are laid by and cover crops allowed to grow. This practice is followed with a fairly good degree of success on these soils, but they do not produce the best grade of fruit. The best quality of fruit is produced on Calcarous and hammock soils where very little cultivation is practiced. Grasses and cover crops are controlled by mowing and trees hoed once each year. It seems the less we cultivate our groves, the better grades of fruit we can produce. If we had our groves sufficiently irrigated we could do away with cultivation entirely.

Within a short time you will find the most successful growers of this State, turning their attention to irrigating their groves where possible and growing of heavy cover crops, using mowing machines in place of discs and plows and using high analysis fertilizer, containing more concentrated available plant food materials and applying these in the right proportions at the right time, and not interfering with the growing of the cover crops. If this practice was followed you would find a marked improvement on grades of fruit produced and the cost of grove operation decreased.

We have plant food materials on the market today that can be purchased in almost soluble form. This

means that the grower can apply this fertilizer to the surface with reasonable assurance that it will go into solution within a short time and be taken up by the tree.

Present Trend Toward Use of More Concentrated Fertilizers

The chemist in the laboratory and the biologist in the field are turning their attention more and more to the solution of the question—What is the most economical and desirable form of fertilizer to apply? The present trend of fertilization indicates that the world as a whole is approaching by common consent, though from various angles, the general use of complete concentrated fertiizers, and the rapid growth of nitrogen fixation is furnishing a powerful stimulus to this use. Europe for some time has been using concentrated fertilizers, but she has generaly appied the three chief elements separately. The American practice, on the other hand, has been to use single appications of mixed fertilizers of much lower analysis.

The fertilizer industry must look carefully to the future and not be found lacking in either methods of production or distribution. Closer attention should be given to research and development in manufacturing plants, field experimentation and demonstration.

The United States Department of Agriculture and the numerous Experiment Stations, although handicapped by insufficient funds, are aiding the farmers in determining the kind of fertilizers to use for different crops on different types of soil. Although rapid progress has been made, there is more opportunity for advancement just ahead. Education based upon information obtained by carefully planned and executed reresearch is essntial to further progress.

THE IMPROVEMENT OF FRUIT GRADES FROM THE STAND POINT OF PACKING HOUSE

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tion. This should not necessarily mean that the less attractive fruit from one grove should be thrown into a lower grade. The fact a standard for a grade is the minimum limit allows some leaway. Also, general similarity of the somewhat less attractive fruit is in its favor. If the fruit of the two varying groves were thrown together in the pack, I would say the inferior probably would be reduced in grade, but regarded separately and handled separately as is usual except with the smallest groves, the less attractive fruit should make a good Number One pack and be accepted as such by the trade, if it conforms to the Number One limits.

In actual inspection in a house, we take 100 fruit from each grade from the bins. We classify this as Number One or Number Two according to the texture, shape, color, defects such as caused by lemon scab, melanose, thrip marks, mechanical injuries and so on. Therefore, we see this fruit by itself, and not in contrast with the fruit of a more favored grove and are able to see it from the viewpoint of the standard alone and whether or not it meets the minimum requirements of the grade.

This does, I believe, tend toward maintaining uniformity of grade considering the state as a whole. It does not penalize the producer of the less favored section or grove. It meets the requirements of the trade. The trade automatically will adjust the difference that exists in quality between two Number Ones. The trade knows of the variation that exists. It will pay the base price for both Number Ones and give the better Number One the margin it deserves.

Conditions affecting the quality of fruit probably have been worse this season than in any past year. There has been all the more reason and necessity for close adherence to the standards. This is exampled forcibly by the reactions in a certain section which I will cite. This section has fine fruit ordinarily. It won a high

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TRACKING THE FLY

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its natural foods to feed upon. Meanwhile in the infested properties the judicious doses of bait spray, which by reason of both odor and flavor is most attractive to the fly, will provide food for the otherwise hungry insects. And those flies who partake of the bait spray in most cases shortly will be dead flies.

"That, briefly, is the plan of campaign for the eradication forces for the next few months. It has been carefully devised and if conditions permit following it out thoroughly and intensively there is every expectation for satisfactory results.

"In order to assure success of this campaign, however, it is going to be necessary to clean thoroughly both the infested and the protective zones of natural foods upon which the fly may feed. That is why stress has been placed upon the removal of all host fruits and vegetables for a distance of ten miles from each infestation, to provide a host-free period until about November 1. During this time the ranks of the flies which a short time ago were so abundant upon many infested properties should be thinned materially through the flies partaking of the bait spray.

"On paper this plan of campaign is simple enough. In actual operation it should not be so difficult. Yet in order to be successful it involves necessity for the co-operation of almost every man, woman and child within ten miles of the spot where any infestation has been located.

"Even though a large number of people are now comprised in the joint forces of the Plant Quarantine and Control Administration of the United States Department of Agriculture and of the State Plant Board, and these are extremely active, it is manifestly impossible that these workers alone will be able to do all which is required in the already large area over which infestations have been found. Other citizens must voluntarily play their part in order to assure the campaign's success.

"Not a guava, not a peach, not a mulberry, not a Surinam cherry, not any one of all the known host fruits and vegetables, must be left within the reach of the fly this summer, if we are to obtain a maximum result from the eradication efforts during this period. It is impossible for persons outside the State of Florida to realize the immensity of the task this will create. Only Floridians with their knowledge of actual conditions can appreciate what is involved. To many residents within the infested and protective zones this will mean sacrifice and discomfort. To many more it will mean hardships. In some instances the hardships are going to be very great. Yet it is by this action, and only by this action, that we may expect to be relieved of the pest which constitutes the greatest threat which has to date faced the important citrus and vegetable industries of our state. These industries mean a great deal to the peninsula of Florida. They are the backbone of its business structure and development. Directly and indirectly they affect the prosperity of almost every individual. Therefore, there is justification for calling upon the people as a whole to volunteer their best efforts and their most thorough and active co-operation to making this eradication work a success.

"As between those who, refusing to face the facts, contend there is nothing to fear from the fly and those on the other hand who believe there is no hope of eradicating the fly, and that our fruit and vegetable industries must be abandoned, there must be a sane middle ground. The fly is an actuality, the federal quarantine against Florida products is a reality. It also is true that in places outside the continental United States this same fly has resisted all eradication efforts and has over-run districts to the extinction of producing industries. Yet we have the benefit of a relatively early start against it in Florida. We are able to oppose it here with men and measures such as have not opposed it in other places. There is no occasion to abandon hope. On the contrary, if we act vigorously and unitedly, and for the time being subordinate all other considerations to the work of eradication and attack our job with determination, we should not only be able to control but ultimately to eradicate it, and thus restore the affected industries to their former places of prosperity. Already, through the co-operation of citizens and the hard work of the official forces, the flies in heavily infested area have been greatly reduced in numbers."

The eradication forces are taking excellent care of those properties comprised within zones 1. Incentive to growers with properties inside zones 2 (the protective areas surrounding each infested zone) to clear their properties thoroughly of all host fruits and vegetables is provided in the federal quarantine regulations.

Shipping of citrus fruits from the

protective zones ceases on June 1. The regulations then provide for a host-free period until about November 1. During this period no host fruits or vegetables of any character, excepting immature citrus fruits on the trees, are to be allowed to exist within either the infested or the protective zones. Committees of growers in many areas are checking carefully for the presence of such hosts, and indications are that the host-free period generally will be observed most carefully.

Stimulus to individual grove owners in zones 2 to see that no host fruits or vegetables exist upon their properties during the host-free period is provided in that portion of the federal quarantine regulation reading as follows:

> "No permits will be issued for the interstate movement of citrus fruits produced on premises within any protective zone unless the host-free period has been maintained on such premises."

It is pointed out that the wording of this paragraph is very clear. Grove owners in the protective zones who will wish to obtain permits for the shipment of fruit next season therefore are expected to be extremely alert in looking to the removal of all host fruits and vegetables not only from their own properties but from adjacent lands surrounding them.

As these lines are written there is plenty of visible evidence that property owners in zones 3, particularly the owners of valuable citrus properties, are conducting their own clean-up operations and inspiring others to clean up host plants in every area into which it would seem there is chance of the fly spreading.

Since the above was written infestations have been discovered at Ozona in Pinellas county and at Platt Lake in Hillsborough county, about twelve miles north of the city of Tampa, also at Plant City and Knights Station.

REFRIGERATION OF INFESTED FRUIT NOT AN ADEQUATE SAFEGUARD AGAINST SPREAD OF FRUIT FLIES

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been possible to avoid from more rapid ripening or even spoiling of the upper tiers of the shipment. Such variation in temperatures is apt to be especially marked under refrigeration in ocean transit and an examination of the refrigeration "log" of vessels engaged in fruit and vegetable carriage clearly indicates such variation. In addition to this variation of temperature for different elevation of tiers is the variation in results, due to nature of packing and the arrangements for circulation of air within the refrigerating chambers. The variation here discussed is entirely aside from, and supplemental to, the important consideration of the failure so far of refrigeration to kill 100% of fruit fly larvae and pupae in commercial shipments."

In view of this situation it would seem clear that refrigeration of possibly infested fruit cannot for the present be considered as a reliable safeguard against the Mediterranean or other fruit flies, and to authorize it prior to a full demonstration of its complete and thoroughgoing effectiveness in ordinary commercial practice might well open to menace the entire fruit industry of the United States.

Lights directed on the stove, table and sink add to the efficiency of the worker because they prevent her from working in her own shadow.

Home demonstration club women of Marion County have recently set out 189 rose bushes which they purchased cooperatively.

THE IMPROVEMENT OF FRUIT GRADES FROM THE STANDPOINT OF PACKING HOUSE

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trade preference in the past. It was affected considerably by the abnormal conditions of last year. Its management relaxed from the fairly regular grade and pack which built up the preference accorded it in the past. Today, the trade has swung away from the brands of this section. It has lost a large part of the markets it formerly enjoyed and has been heavily penalized in price in comparison with other sections. It now is rated by the trade among the less favored sections of the state, even though it does not deserve such rating when its normal crop is considered.

It has been a general inclination on the part of the grower and operator to vary the grade from one season to another as the volume of the different grades varied. In fact, in the past, in an unfavorable year, the grade has been run so low as to incur drastic penalties from the trade. Because of the heavier volume of lower grade fruit this season, the main difficulty in inspection has been the fear of many growers and operators that grading was too close. However, there has been on change in the standards adopted. The standard we are holding to is the same that several of the operators have followed for the past five years.

Previous to this year, there has been no concerted effort among the operators toward a standard pack. This season there is a large number of operators, who, through their affiliation with the Clearing House, have made a sincere effort to improve grading, attain more uniformity and make a more attractive package. While cupidity may have been a factor in the past, I believe past conditions in grade largely have been the result of a lack of knowledge of what really constitutes minimum standards. Much has been gained by education this season. There is still room for more, even among those who have advanced.

When any considerable number of operators disrupt the minimum standard they not only attract a penalty upon their own brands, but they bring all the fruit of the state into disrepute. Recognition of this fact will go far toward meeting some of our marketing difficulties.

Despite the great improvement made by the principal group of operators, we still have too large a percentage of operators and therefore too large a volume of fruit without regular inspection to maintain standards within necessary limits and attain more than a minimum degree of uniformity.

This counter-balances the better work of the others. The improved practice of the majority can withstand the competition and unfavorable effects of the other only to a limited extent.

Like the poor, we probably will have the individually acting operators with us always. I believe it is best to look the facts in the face. It appears more and more to me that we will eventually have to envoke the power and authority of the state.

CLASSIFIED Advertisments

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

FOR SALE—By owner, eighty acres, two-year-old best looking grove at reasonable price. Howey-in-the-Hills. For further information write "A. Z." P. O. Box 1261, Orlando, Florida.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

FOR SALE—Pineapple land in winterless Florida. $15 an acre. Almont Ake. Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY, ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANT TO hear from owner having farm for sale; give particulars and lowest price. John J. Black, Box 93, Chippewa Falls, Wisconsin.

MISCELLANEOUS

FOR SALE: Splendid bearing citrus grove in Lee County, far removed from Fruit Fly infestation. Will produce 20,000 boxes coming season. If you want this grove address P. O. Box 295, Fort Myers, Fla.

RUNNER peanuts—Spanish peanuts Early speckled - Osceola - White Chinese and Bunch Velvet Beans. All varieties peas and Soybeans. Large or small lots. H. M. Franklin, Tennille, Georgia.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds $5.00 each; also eggs for hatching $5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Fla.

WANTED COMPLETE LINE OF CITRUS GROWERS' SUPPLIES

A well known reputable firm of national scope, marketing certain materials required by citrus growers, is extending its line of merchandise to cover complete requirements of its customers.

If you have something excellent to merchandise—fertilizer, orchard heaters, pest control material or equipment, or any similar product for wide distribution—I can tell you whom you should see.

Address: J. T. Pierson, 503 South Union Drive, Los Angeles, Calif.

BEGGARWEED SEED. Place your order for Beggarweed seed now and be assured of delivery. Write for special prices. Wm. G. Ranney, Box 297, Monticello, Fla.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FARMER AGENTS: Make $25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Rusler Co., Box C-18, Johnstown, Ohio.

FOR SALE—All varieties bananas and citrus trees. D. A. Nigels, Palm Harbor, Fla.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa, Fla.

AVOCADOS - SEED — Grafted. Reliable bearers only. John B.Beach, West Palm Beach, Florida.

BABY CHICKS: Send no money, shipped C. O. D., pay mail man when delivered. Leghorns $14.00 per 100; reds, orpingtons, minorcas $16.00; mixed $13.00; live delivery, postpaid. Florida Baby Chickery, Lakeland, Florida.

ROUGH LEMON Seedlings in any quantity, special summer sale, very attractive prices. A. E. Nichols, Box 262W, Tampa, Fla.

CITRUS EXPERT and landscape gardener desires superintendency of larger grove or estate. Address, P. O. Box 2072, Sarasota, Florida.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

Orange industry & trade

SOME ORANGE HISTORY

Columbia, S. C. Record

We wonder what per cent of the people who enjoy the juice of the orange, perhaps the most popular of all citrus fruits, know about its culture; where it comes from and to what heights and depths it alternately rises and falls in a single season.

In 1927, the latest figures available disclose that oranges are produced in many countries throughout the world where there is a subtropical climate. The United States and Spain are by long odds the largest producers. The production of this country is only a little higher than the production of Spain.

The other countries raising oranges in commercial quantities are Italy, France, Greece, Algeria, Cyprus, Palestine, Union of South Africa, Japan, leading American wholesale markets for this fruit include New York, Chicago(Baltimore, and St. Louis.

In New York it is estimated 65 per cent of the oranges are grown in California and 31 per cent in Florida. The California oranges are more costly in all markets than Florida oranges, for no reason at all, except California growers and distributors out-talk and out advertise Florida growers and distributors.

The world market is now taking far more oranges than it did a year ago, and a hundred times its demand over ten years ago, so it looks as though we shall have plenty of this choice fruit for many generations, to say the least of it.

SPEAKER IN COMMONS EATS FLORIDA CITRUS

Donald MacLean, K. C. B. of London, England, speaker of the British house of commons, is enjoying Lee county oranges and grapefruit for breakfast these mornings. Two boxes of citrus from the Gilmer M. Heitman groves at Caloosa were sent him at the order of E. A. Richard of Fort Myers. In a cablegram yesterday Sir Donald acknowledged receipt of the fruit "in perfect condition," and expressed his enjoyment of it. Mr. Richard placed the order with C. B. Foster of Alva, who referred it to H. S. Parkinson, manager of the Caloosa Valley Growers association. —Fort Myers News.

Flagler County is digging its early Irish potato crop fully one month earlier than usual, reports L. T. Nieland, county agent.